

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (original) A method for identifying an agent for treating a diabetic or pre-diabetic individual, the method comprising the steps of:
  - (i) contacting a candidate agent with a kidney or pancreatic cell that expresses a nucleic acid encoding a polypeptide having glucose phosphorylating activity that comprises at least 20 contiguous amino acids of SEQ ID NO:2;
  - (ii) determining the activity of the polypeptide; and
  - (ii) selecting an agent that inhibits the activity of the polypeptide, thereby identifying an agent for treating a diabetic or pre-diabetic individual.
2. (original) The method of claim 1, wherein the polypeptide comprises SEQ ID NO:2.
3. (original) The method of claim 1, wherein the polypeptide is overexpressed relative to normal.
4. (original) The method of claim 1, wherein the cell is a pancreatic cell.
5. (original) The method of claim 4, wherein the pancreatic cell is from a diabetic animal.
6. (original) The method of claim 1, wherein the step of determining the activity of activity of the polypeptide comprises determining the ability of the polypeptide to phosphorylate a hexose.

7. (original) The method of claim 1, wherein the step of determining the activity of the polypeptide comprises determining the amount of protein present using an immunoassay.
8. (original) The method of claim 1, wherein the agent is an siRNA.
9. (original) The method of claim 1, wherein the agent is an antisense RNA a small molecule.
10. (original) A method for identifying an agent for treating a diabetic or pre-diabetic individual, the method comprising the steps of:
  - (i) contacting a candidate agent with a kidney or pancreatic cell that expresses a nucleic acid encoding a polypeptide having glucose phosphorylating activity that comprises at least 20 contiguous amino acids of SEQ ID NO:2;
  - (ii) determining the level of an RNA that encodes the polypeptide; and
  - (ii) selecting an agent that inhibits the activity of the polypeptide, thereby identifying an agent for treating a diabetic or pre-diabetic individual.
11. (original) The method of claim 10, wherein the polypeptide comprises SEQ ID NO:2.
12. (original) The method of claim 10, wherein the cell is a pancreatic cell.
13. (original) The method of claim 10 wherein the pancreatic cell is from a diabetic animal.
14. (original) The method of claim 10, wherein the step of determining the level of an RNA that encodes the polypeptide comprises an amplification reaction.
15. (original) The method of claim 10, wherein the cell is a pancreatic islet cell.

16. (original) The method of claim 10, wherein the agent is an siRNA.
17. (original) The method of claim 10, wherein the agent is an antisense RNA.
18. (original) The method of claim 1 or claim 10, further comprising:  
administering the agent to a diabetic or pre-diabetic animal;  
determining the response of the animal to glucose; and  
selecting a candidate agent that improves the response to glucose.
19. (original) The method of claim 18, wherein the step of determining the response of the animal to glucose comprises determining the level of glucose-induced insulin secretion.
20. (original) The method of claim 1 or claim 10, further comprising:  
administering the agent to an animal that is a diabetic or pre-diabetic model;  
determining the level of the polypeptide or the nucleic acid encoding the polypeptide in a pancreatic sample from the animal; and  
selecting the candidate agent that decreases the level of the polypeptide or the nucleic acid.
21. (currently amended) A method for identifying an agent for treating a diabetic or pre-diabetic individual, the method comprising the steps of:
  - (i) contacting a candidate agent with a polypeptide having glucose phosphorylating activity that comprises at least 20 contiguous amino acids of SEQ ID NO:2;
  - (ii) determining binding of the agent to the polypeptide determining binding of the agent to the polypeptide, wherein determining binding of the agent to the polypeptide comprises determining the activity of the polypeptide;
  - (iii) selecting an agent that ~~binds to the polypeptide~~ decreases the activity of the polypeptide;
  - (iv) administering the agent to a diabetic or pre-diabetic animal;
  - (v) determining the response of the animal to glucose; and

(vi) selecting an agent that improves the response to glucose.

22. (cancelled)

23. (original) The method of claim 21, wherein the step of determining the response of the animal to glucose comprises determining the level of glucose-induced insulin secretion.

24.-33. (cancelled)

34. (new) The method of claim 21, wherein the polypeptide comprises SEQ ID NO:2.

35. (new) The method of claim 21, wherein the contacting step comprises contacting a cell that expresses the polypeptide with the candidate agent.

35. (new) The method of claim 35, wherein the cell comprises an expression vector that expresses the polypeptide.

36. (new) The method of claim 21, wherein the cell is a pancreatic islet cell.